

REMARKS

Responsive to the Office Action mailed November 10, 2009, Applicant provides the following. Claims 22, 24 and 41 are currently being amended, and no claims are currently being canceled or added. Claims 15-21, 23 and 42 were previously canceled without prejudice. Therefore, claims 1-14, 22 and 24-41 are currently pending in the application. Reconsideration of the pending claims in view of the amendments above and remarks below is respectfully requested.

By way of this amendment, Applicant has made a diligent effort to place the claims in condition for allowance. However, should there remain any outstanding issues, it is respectfully requested that the Examiner telephone the undersigned at (858) 552-1311 so that such issues may be resolved as expeditiously as possible.

Petition for Extension of Time

Applicant has submitted herewith a Petition and Fee for a Three-Month Extension of Time to extend the period for response to May 10, 2010.

Allowable Subject Matter

Applicant would like to thank the Examiner for indicating that claims 1-14, 27, 29, 31, 33, 35 and 40 are allowed. (Office Action mailed 11/10/09, Office Action Summary, and page 2).

The Office Action indicates that claim 30 is directed toward allowable subject matter and would be allowable if rewritten in independent form. (Office Action mailed 11/10/09, Office Action Summary, and page 2). Applicant respectfully requests that this matter be held in abeyance until the remarks and amendments presented herein have been considered.

Comments on Statement of Reasons for Allowance of Claim 4

With respect to the Examiner's statement of reasons of allowance for independent claim 4 on page 3 of the present Office Action mailed 11/10/09, it appears that the Examiner has inadvertently misquoted the language of claim 4. Specifically, claim 4 does not recite the

“projecting a first image . . .”, “projecting a second image . . .”, and “outputting the first and second images . . .” language as is indicated on page 3 of the present Office Action mailed 11/10/09. However, Applicant asserts that independent claim 4 is allowable over the prior art for at least reasons that are the same or similar to the three reasons provided below for amended independent claim 22.

Claim Rejections - 35 U.S.C. §112

Claims 22 and 24 have been rejected under 35 U.S.C. 112, second paragraph, as allegedly failing to include sufficient antecedent basis for “the frame”. Applicant respectfully traverses these rejections.

Applicant has amended claims 22 and 24 to recite “the target frame” instead of “the frame”. Applicant asserts that the claims do include sufficient antecedent basis for “the target frame”. Therefore, the rejections should be withdrawn.

Claim Rejections - 35 U.S.C. §103

Claims 22, 24-26, 28, 32, 34, and 36:

Claims 22, 24-26, 28, 32, 34, and 36 have been rejected under 35 U.S.C. §103(a) as being anticipated by Japanese Patent Document JP 09-035040 (Seki) in view of U.S. Patent No. 6,556,210 (Yamamoto et al.). Applicant respectfully traverses these rejections.

In an effort to advance this application to allowance, Applicant has amended independent claim 22 as follows:

22. (Currently Amended): An image generating apparatus which includes an image memory, an image conversion unit and an image data output unit,
wherein said image memory records, in sequence, original moving pictures for each frame,
wherein said image conversion unit regards original moving pictures stored in said image memory as two-dimensional images that vary along a time axis, and, when the moving pictures are expressed, in a virtual manner, as a box space formed by the two-dimensional images and the time axis, cuts the box space by a surface that contains a plurality of points each of which differs from the other in time value, and projects an image that appears on the cut surface onto a plane perpendicular to the time axis, such that:

~~wherein~~ said image conversion unit determines, for each in-picture position of an

image contained in a target frame, a plurality of frames at predetermined time intervals from the frames recorded in said image memory, and
~~wherein~~ said image conversion unit reads out, from the plurality of frames, data that correspond to the in-picture position and synthesizes the data at an alpha value according to an attribute value thereof, for each in-picture position, and
wherein said image data output unit outputs, as new moving pictures, the images that appear on the perpendicular surface by varying the cut surface in time, such that:
~~wherein~~ said image data output unit sequentially outputs the target frame synthesized and reconstructed by said image conversion unit along a time axis.

This amendment is supported by Applicant's original disclosure at least by Paragraphs [0007]-[0009], [0035]-[0036], [0058], and [0064], as well as original claims 1-2, 4-5, and 40, of the published version of Applicant's application (i.e., U.S. Pub. No. 2004/0130637 A1). Independent claims 24 and 41 have been amended in a similar manner.

Applicant asserts that the rejection of amended independent claim 22 should be withdrawn because it now includes several limitations similar to language included in allowable claim 1. For example, amended independent claim 22 now includes language involving a "cut surface", which was not previously recited.

More specifically, Applicant's amended independent claim 22 recites that the image conversion unit "cuts the box space by a surface that contains a plurality of points each of which differs from the other in time value". The Examiner has previously alleged that Seki's surface (I) corresponds to Applicant's claimed "cut surface". (See Final Office Action mailed 10/18/07, Last Line of Page 17, and Middle of Page 18). But as Applicant has previously argued (see Amendment filed 1/18/08, pp. 14-15), Seki's surface (I) cannot correspond to Applicant's claimed "cut surface". This is because Seki states that $I(x, y)$ is a representation of the images at an instant (11, 12, 13) shown in Seki's Figure 2. (Seki, Paragraph [0011], lines 2-3). Because each image (11, 12, 13) is at "an instant", it follows that every point in each image has the same time value. This means that each image, such as for example image 11, which according to Seki is represented as $I(x, y)$, does not contain any points that differ in time value. Therefore, none of Seki's surfaces (I) are "a surface that contains a plurality of points each of which differs from the other in time value", as is required by Applicant's amended claim 22. This means Seki's surface

(I) cannot correspond to Applicant's claimed "cut surface". This provides a first reason why the rejection of Applicant's amended independent claim 22 should be withdrawn.

Applicant's amended independent claim 22 also recites that the image conversion unit "projects an image that appears on the cut surface onto a plane perpendicular to the time axis". The Examiner has previously alleged that Seki teaches projecting an image (C) that appears on the cut surface (I) onto a plane (L) perpendicular to the time axis. (See Final Office Action mailed 10/18/07, Page 4, Lines 11-16). Applicant respectfully disagrees and asserts that Seki's plane (L) is not perpendicular to the time axis t .

Specifically, as Applicant has previously argued (see Amendment filed 1/18/08, pp. 12-13), Seki teaches that trace cross-sectional image $L(s, \theta; t)$, (see Figure 5), is an image obtained by cutting, (see Figure 4), the time-space image $I(x, y; t)$ with a helix plane along the movement direction of the object. (Seki, Paragraph 12, Lines 6-8). This plane completely contains the information pertaining to the movement of the object, that is, movement velocity (speed) and movement direction. (Seki, Paragraph 12, Lines 8-11). Nowhere does Seki disclose or suggest that the trace cross sectional image (L) is perpendicular to the time axis t . Therefore, Applicant's claims are patentable over Seki.

In fact, Seki teaches away from the trace cross sectional image (L) being perpendicular to the time axis t . This can be seen clearly in Seki's Figure 5 which shows the two dimensional trace cross sectional image (L) has a time axis t . The fact that the time coordinate t is included contradicts the image (L) being perpendicular to the time axis t . Stated differently, Seki teaches that image (L) contains information pertaining to a speed of the movement of an object, which is why the time coordinate t is included. The Examiner's previous assertion that Seki's image (L) is perpendicular to the time axis contradicts Seki's teaching that image (L) contains information pertaining to a speed of the movement of an object.

What is more, Seki describes that image (L) is intended to represent a locus of movement of an object. As such, the image (L) cannot be perpendicular to the time axis t , which would be appreciated by anyone skilled in the art as a matter of course. An interpretation that the image (L) is perpendicular to the time axis t would be misconstruing the reference in a manner contradictory with its very purpose.

Moreover, projecting Seki's cross section image (c) into a plane perpendicular to the time axis would defeat the stated purpose of Seki: that is to extract an object movement trace. (Seki, Paragraph 5, Line 2). The trace cross sectional image (L), after all, is a depiction of the object movement over time. As explained by Seki, the trace cross sectional image (L) captures the speed and direction of the object. (Seki, Paragraph Paragraph 12, Lines 8-11). If the cross section image (C) were projected into a plane perpendicular to the time axis as the Office Action asserts, there would be no information about the speed and direction of the object and Seki's device would not work for its intended purpose.

Therefore, this provides a second reason why the rejection of Applicant's amended independent claim 22 should be withdrawn.

Applicant's amended independent claim 22 also recites "wherein said image data output unit outputs, as new moving pictures, the images that appear on the perpendicular surface by varying the cut surface in time". Applicant asserts that this limitation is not disclosed or suggested by Seki because, as Applicant has previously argued, Applicant asserts that Seki's disclosure is directed toward outputting a single still image. (See Amendment filed 7/30/09, pp. 11-13; Amendment filed 1/18/08, pp. 13-14).

Specifically, in the present office action the Examiner asserts that Seki's Paragraph [0015], lines 1-5, discloses wherein said image data output unit sequentially outputs the synthesized and reconstructed image data along a time axis. (See Office Action mailed 11/10/09, bottom of Page 5). Applicant hereby repeats its previous argument that Seki's disclosure actually teaches away from forming new moving pictures. Specifically, Seki's Paragraph [0015] says nothing about generating moving pictures. Instead, that paragraph merely states that "the trace cross-sectional image" may be obtained for each of plural objects. Applicant asserts that in the context of the Seki's whole document, "the trace cross-sectional image" means a single still image. There is nothing in Seki that teaches or suggests how the single images might somehow be made into moving pictures, and there is certainly nothing in Seki that teaches or suggests the output of moving pictures along a time axis.

The Examiner also cites Seki's Paragraph [0012], lines 1-2 and 8-11. (See Office Action mailed 11/10/09, top of Page 6). But as Applicant previously argued (See Amendment filed

7/30/09, bottom of page 12), there is similarly nothing in that paragraph that discloses or suggests outputting moving pictures. Specifically, the “object trace”, which is an output provided by Seki, is in the form of a still image by its very nature. Applicant asserts that it would be unreasonable to interpret the object trace of Seki as being in the form of moving pictures. There is nothing in Seki that discloses or suggests outputting moving pictures. Seki’s disclosure is directed toward outputting a single still image.

In addition, similar to the Office Action mailed 2/2/09, the present Office Action again appears to equate Applicant’s claimed “image data output unit” with the “camcorder” of FIG. 1 of Seki. (See e.g. Office Action mailed 11/10/09, page 4). However, ¶0011 of Seki merely states “a camcorder is used to take the consecutive images that are input to an image processor”. Seki’s description regarding a camcorder does not support an argument that the synthesized, output images are moving pictures. Accordingly, Applicant believes that it is not reasonable to interpret that the apparatus of Seki outputs synthesized images as moving pictures. Indeed, the Examiner previously admitted that “Seki does not specifically teach forming new moving images by sequentially outputting frames formed in the synthesizing”. (Office Action mailed 5/14/08, bottom of page 6).

Therefore, because Seki’s disclosure is directed toward outputting a single still image, Seki teaches away from forming new moving pictures. This means that the claimed feature would not have been obvious to a person of ordinary skill in the art. As such, this provides a third reason why the rejection of Applicant’s amended independent claim 22 should be withdrawn.

Regarding the newly cited Yamamoto et al. reference, the Examiner does not appear to have asserted that it discloses the limitations being added to independent claim 22 in the above amendment. As such, the Examiner presumably relies on Seki as allegedly disclosing such limitations, which Applicant has thoroughly addressed in the above amendments and remarks.

Therefore, for all of the above reasons, Applicant asserts that the rejection of Applicant’s amended independent claim 22 should be withdrawn. Furthermore, the rejections of Applicant’s amended independent claims 24 and 41 should also be withdrawn for the same reasons since

they have been amended to include similar language. And finally, the rejections of claims 25-26, 28, 32, 34 and 36 should also be withdrawn for at least these same reasons due to their dependence on their respective independent claim.

Claims 37-39:

Claims 37-39 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Seki in view of Yamamoto, in further view of Fels et al., entitled “Techniques for Interactive Video Cubism”. Applicant respectfully traverses these rejections.

Claims 37-39 depend from amended independent claim 22. Therefore, the rejections of claims 37-39 should also be withdrawn for at least the same reasons provided above due to their dependence on amended independent claim 22.

Claim 41:

Claim 41 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Seki in view of Yamamoto, in further in view of Okajima (US 2002/0122037). Applicant respectfully traverses these rejections.

Applicant has amended independent claim 41 in a manner similar to independent claims 22 and 24. Therefore, the rejection of claim 41 should also be withdrawn for at least the same reasons provided above for amended independent claims 22 and 24.

CONCLUSION

Applicant submits that the amendments and remarks presented herein place all pending claims in condition for allowance and early notification of the same is respectfully requested.

Respectfully submitted,
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Dated: May 7, 2010

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